Redwood Road & I-215 3M Contrast Tape Pavement Marking System Interim Report

Experimental Feature X(04)04

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Redwood Road (9000 South to 10600 South) & I-215 (4700 South to Redwood Road)

Introduction

As part of the Reconstruction of Redwood Road, it was suggested that a grooved-in 3M Contrast Tape be tested for durability and reflectivity.

As part of the Reconstruction of I-215, it was suggested by the Region Director, that a 3M Contrast Tape be tested for durability and reflectivity. Previous test sections of this product include Redwood Road (90th to 104th South) and I-215 West (700 North to the Davis County Line). The I-215 West section is included in its own report as several products were placed in one test section; this report is available under Experimental Feature X(04)01. The purpose of these two test sections is to find a cost-effective material for high-volume rigid pavements in Utah.

Project Responsibilities

Responsibilities on the projects are as follows:

UDOT Central Maintenance

- Record LaserLux readings and submit to the Research Division.

UDOT Research Division

- Identify performance measures,
- Documentation,
- Technology evaluation,
- Recommendations for future application and,
- Implementation.

UDOT Region 2 Construction

- Prepare the work plan,
- Contact vendors
- Source of funding in coordination with FHWA,
- Project site selection,
- Traffic control,
- Administer contract for surface preparation/grooving and
- Implementation.

Project Locations

On Redwood Road the grooved-in contrast tape extends the length of the project from 9000 South to 10600 South. This road is a principal arterial.

A section of I-215 on the south end of the valley was selected between 4700 South and Redwood Road as part of the reconstruction efforts. The location has enough traffic to make it high-volume, but isn't as busy as I-15.

Scope

It is believed that placing a pavement marking material in a grooved recess will prolong the life of the material since the snowplows will ride on the surface rather than the material. Redwood Road will allow a principal arterial to be evaluated while the I-215 section is a high volume freeway where the life cycle cost of the grooved material and whether the grooving makes a material dirty (due to sand and dust settling in the groove) and ruins wet-night reflectivity (a wet film refracts headlights) can be evaluated for both roadway classifications. Since this is a newly widened roadway, locking the lane alignment was not considered a problem.

Peck Striping installed 3M's pavement marking contrast tape. Comax Industries grooved the recess for the tape since they have a dry dustless grooving process. The cost for this experimental feature will be a change order into the federally funded reconstruction project.

Goals/Objectives/Tasks

In summary, here are the goals, objectives and tasks of these two projects:

***GOAL*:** The goal of these two projects is to determine if grooved tape is a cost-effective pavement marking system (material and surface prep) for high-volume rigid pavements or principal arterials at UDOT.

Objectives/Tasks:

1. Produce failure curves for these pavement marking systems.
    a. Measure durability.
    b. Measure retro-reflectivity.
2. Implement findings.
    a. Give results to Regions.
    b. Meet with each Region to discuss results.
3. Place results on AASHTO's APEL website for other states' information.

Preliminary Results

To date the following tabulated information has been gathered for the I-215 and Redwood Road test sections. Any future recommendations or conclusions will be based on the performance of this product over the next several evaluation periods. Currently, a Pavement Marking QIT is looking at statewide methods, applications and guidelines. Over the course of the next six months to a year recommendations for the Regions will come from this QIT. Members representing Central Maintenance, Materials, Traffic & Safety, Research and the regions are working to coordinate all efforts regarding pavement markings.

Summary of Redwood Rd. Tape Test Readings		
	Avg. 2/4/2005	**Avg. 7/7/2005**
NB Skip	442.7	399.4
SB Skip	363.3	353.9
Combined	403.0	376.6
	Avg. 2/4/2005	**Avg. 7/12/2005**
NB Yellow	209.4	260.9
SB Yellow	217.7	251.5
Combined	213.6	256.2

Summary of 215 (47th to Redwood) Tape Readings		
	Avg. 2/4/2005	**Avg. 7/12/2005**
NB 1st Skip	529.3	523.5
NB 2nd Skip	551.8	532.4
NB 3rd Skip	520.0	
SB 1st Skip	545.8	387.3
SB 2nd Skip	509.4	515.5
Combined Skip	531.3	489.7
	Avg. 2/4/2005	**Avg. 7/7/2005**
NB Yellow	196.6	207.7
SB Yellow	243.6	257.9
Comb. Yellow	220.1	232.8